Please replace the paragraph at page 16, lines 7-16, with the following rewritten paragraph:

The CF-complementary and CF-non-complementary strands that were used were:

CF-complementary:

3'- TGGTAATTTCTTTTATAGTAGAAACCACAAAGG-5'

CF-non-complementary (F-508):

5'-GGAAACACCAATGATATTTTCTTTAATGGT-3'

Control B2-complementary: 3'-CAGTTCTACGATGGCAAGTC-5'

Control B2-non-complementary (3 bases different):

5'- CTGAATTATAGCATCTTGAC-3'

Control B2-non-complementary: 5'-CTGAATTATAGCATCTTGAC-3'

IN THE CLAIMS

Please amend claims 5-7, 9-11, 14 and 17 as follows:

5. (Amended) A semiconductor device according to Claim 1 or 3, wherein said conducting semiconductor layer is a semiconductor selected from a III-V and a II-VI material, or mixtures thereof, wherein III, V, II and VI denote the Periodic Table elements III =Ga, In; V=As, P; II=Cd, Zn; VI=S, Se, Te.

6. (Amended) A semiconductor device according to Claim 1 or 3, wherein said conducting semiconductor layer (2) is doped n-GaAs or doped n-(Al,Ga)As.

7. (Amended) A semiconductor device according to Claim 1 or 3, wherein the one or more insulating or semi-insulating layers, that may serve as the base for the device,

is a dielectric material selected from the group consisting of silicon oxide, silicon nitride and an undoped semiconductor selected from a III-V and a II-VI material, or mixtures thereof, wherein III, V, II and VI denote the Periodic Table elements III =Ga, In; V=As, P; II=Cd, Zn; VI=S, Se, Te.

9. (Amended) A semiconductor device according to Claim 6, wherein said conducting semiconductor layer of doped n-GaAs is on top of a semi-insulating layer of (Al,Ga)As which is on top of another semi-insulating layer of GaAs, and on top of said conducting semiconductor doped n-GaAs layer there is a semi-insulating undoped GaAs layer to which is attached said layer of said at least one single-stranded DNA probe.

10. (Amended) A semiconductor device according to Claim 6, wherein said conducting semiconductor layer of doped n-(Al,Ga)As is on top of an insulating layer of undoped GaAs which is on top of a semi-insulating layer of GaAs, on top of said conducting semiconductor doped n-(Al,Ga)As layer there is a semi-insulating undoped (Al,Ga)As layer on top of which there is an upper undoped GaAs semi-insulating layer, and said layer of at least one single-stranded DNA probe is attached to the upper undoped GaAs semi-insulating layer.

11. (Amended) A semiconductor device according to Claim 1 or 3, wherein said at least one single-stranded DNA probe comprises a sequence complementary to a sequence of a target DNA or RNA.

14. (Amended) An array of semiconductor devices according to Claim 1 or 3, wherein each device in the array carries a different DNA probe.

17. (Amended) A method for the detection of a target DNA or RNA which comprises:

(i) exposing the single-stranded DNA probe of at least one semiconductor device according to Claim 1 or 3, to a sample containing the target DNA or RNA, under hybridization conditions; and

a6

(ii) monitoring either the current change resulting from the hybridization process when a constant electric potential is applied between the two conducting pads or measuring the change in the electric potential required to keep a constant current.

Please add the following new claim 19.

19. (New) A method for the detection of a target DNA or RNA which comprises:

(i) exposing the single-stranded DNA probe of an array according to claim 14, to a sample containing the target DNA or RNA, under hybridisation conditions; and

a7

(ii) monitoring either the current change resulting from the hybridisation process when a constant electric potential is applied between the two conducting pads or measuring the change in the electric potential required to keep a constant current.

REMARKS

Claims 1-19 presently appear in this case. The above amendments are being made in order to put this case into better condition for examination.